REMARKS

Reconsideration of the present application, as amended, is respectfully requested.

I. STATUS OF THE CLAIMS

Claims 1-6 and 9-12 are pending in this application. Claims 1 and 9 have been amended. In particular, claim 1 has been amended to clarify that n/(m+n) in this claim is greater than 0 but less than or equal to 0.5.

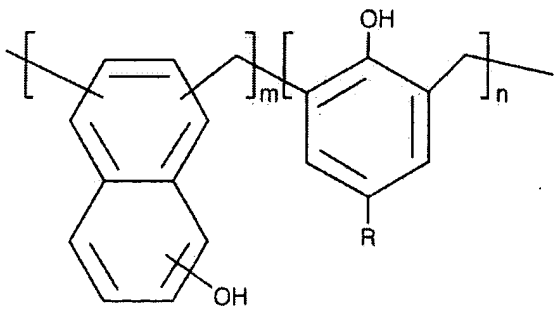
Support for the above amendments may be found throughout the specification as originally filed. No new matter has been added by virtue of this amendment.

II. Claim Rejection under 35 U.S.C. §103

Claims 1-6 and 9-12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent 09-127691 to Gokochi et al (hereinafter Gokochi) in view of its English language abstracts.

The Gokochi reference fails to teach or suggest all of the features recited in claim 1.

The Gokochi reference at the very least fails to teach or suggest a composition for a bottom-layer resist, comprising a polymer represented by the formula:



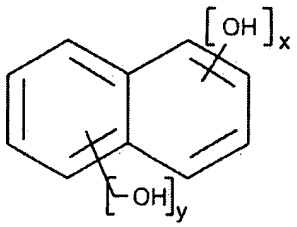
wherein R is hydrogen or a methyl group, m/(m+n) is about 0.5 to about 1.0 and n/(m+n) is greater than 0 but less than or equal to 0.5, as recited in claim 1.

In particular, Gokochi fails to teach or suggest a polymer comprising a hydroxynaphthanlene compound bonded to a hydroxybenzene compound as recited in claim 1 of the presently claimed invention. While Gokochi does describe a polymer comprised in part of a hydroxynaphthanlene compound (see claim 7, column 1 of Gokochi), Gokochi nevertheless still fails to teach or suggest a polymer comprised of a hydroxynaphthanlene compound bonded to a hydroxybenzene compound as recited in claim 1. Moreover, since the polymer of Gokochi fails to contain hydroxybenzene, it must also follow that the polymer described in Gokochi is chemically distinct from the polymer recited in claim 1.

Furthermore, the composition described in Gokochi is chemically distinct from the composition recited in claim 1. In particular, Gokochi is directed to a photoresist composition. In contrast, claim 1 of the presently claimed invention recites a composition for a bottom-layer resist. Clearly, one skilled in the art would recognize that a photoresist composition and composition for a bottom-layer resist are not the same as one another but rather are chemically distinct compositions.

Thus, Gokochi fails to teach or suggest the polymer and/or bottom-layer resist composition recited in claim 1. Therefore, withdrawal of the above rejection to claim 1 is respectfully requested. As claims 2-6 depend from and incorporate all of the limitations of claim 1, withdrawal of the rejection to these claims is likewise respectfully requested.

Besides the reasons mentioned above, claim 2 is even further patentably distinguishable over the Gokochi reference because the Gokochi reference also fails to teach or suggest a composition for the bottom-layer resist which comprises a cross-linker represented by the following formula:



wherein x is an integer in the range of 1 to 3, and y is an integer in the range of 2 to 4.

In the Office Action, it is mentioned that a spot translation by a USPTO staff member indicates that the resin of the photosensitive composition may contain a phenol derivative as a cross-linking agent. Reference in Gokochi that its photosensitive composition may contain a phenol derivative as a cross-linking agent is still insufficient to render claim 2 obvious because there is no teaching or suggestion in Gokochi of the specific cross-linker recited in claim 2. The mere mention of phenol derivatives, without more is insufficient to lead one skilled in the art to the cross-linker recited in claim 2, since the term phenol derivatives encompasses a far too voluminous class of compounds. Specifically, there is no teaching or suggestion in Gokochi of a compound being used as a cross-linker which has two fused benzene rings with hydroxy substituents on each of the fused rings , as recited in claim 2. Rather, the only fused-benzene ring compound specifically mentioned in Gokochi are naphthol or hydroxynaphthanlene, but naphthol or hydroxynaphthanlene are clearly structurally different compounds from the cross-linker recited in claim 2. Therefore, Gokochi, fails to teach or suggest a cross-linker having the specific structure recited in claim 2.

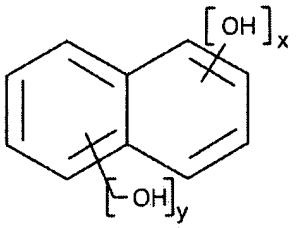
Moreover, it is also noted that claims 5 and 6 are even further distinguished from Gokochi in that the Gokochi reference fails to teach or suggest the specific thermal acid generators recited in these claims.

Next, with regard to claim 9, the Gokochi reference fails to teach or suggest all of the features recited in this method claim.

Specifically, Gokochi fails to teach or suggest a method which comprises forming a first resist layer by coating a resist composition on a layer to be etched on a semiconductor substrate,

wherein the resist composition comprises a hydroxynaphthanlene compound bonded to a hydroxybenzene compound, for similar reasons as discussed above for claim 1.

In addition, the Gokochi reference fails to teach or suggest the cross-linker agent represented by the following formula:



wherein x is an integer in the range of 1 to 3, and y is an integer in the range of 2 to 4, as recited in claim 9, for similar reasons as discussed above for claim 2.

Moreover, besides the reasons mentioned above, claim 9 is even further distinguished from the Gokochi reference because the Gokochi reference also at the very least fails to teach or suggest the coating step (a) and baking step (b) recited in claim 9. Rather, in Gokochi, the photosensitive composition in Gokochi is formed due to a reaction to light. That is, in Gokochi, an optical acid generating generates acid by light and the acid in turn changes the chemical structure of the polymer.

In contrast, in the method of the presently claimed invention recited in claim 9, the composition for the first resist layer is coated and baked. By the baking process, the thermal acid generator generates acid and the cross-linker is cross-linked with the polymer via the generated acid. As a result, the bottom layer resist is formed. Subsequently, a photoresist pattern is formed on the bottom layer by a photolithography process. However, no reaction involving light is used to form the bottom layer resist in claim 9. In sum, a coating and baking step is used to form the bottom layer resist in claim 9, whereas in Gokochi only a reaction involving light is used to form the photosensitive composition without mention of any coating or baking steps being used for this purpose.

Thus, Gokochi fails to teach or suggest all of the features recited in method claim 9. Therefore, withdrawal of the above rejection to claim 9 is therefore respectfully requested. As

claims 10-12 depend from and incorporate all of the limitations from claim 9, withdrawal of the rejection to these dependent claims is likewise respectfully requested.

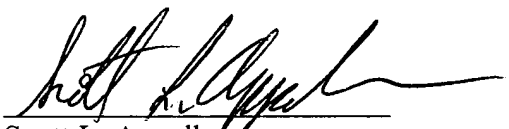
Lastly, it is also noted that claims 11 and 12 are even further distinguished from Gokocki in that the Gokocki reference fails to teach or suggest the specific thermal acid generators recited in these claims.

III. CONCLUSION

In summary, applicants respectfully submit that the present application is in condition for allowance. Early notice to that end is earnestly solicited.

If a telephone conference would be of assistance in furthering prosecution of the subject application, applicants request that the undersigned be contacted at the number below.

Respectfully submitted,



Scott L. Appelbaum
Reg. No. 41,587
Attorney for Applicants

F. Chau & Associates, LLC
130 Woodbury Road
Woodbury, NY 11797
Tel: (516) 692-8888
Fax: (516) 692-8889